Abstract of the Disclosure

A method of compensating within a receiving endpoint for lost audio packets transmitted across an IP network, comprising the steps of storing a packet buffer of samples as a plurality of sub packets within a jitter buffer, inserting at least one interpolated sub packet between successive sub packets in the buffer, and playing out the sub packets from the buffer, such that only small portions of the jitter buffer are replayed at specific times to minimize the negative effects on voice quality. The inventive method inserts the replayed portions to compensate for packet loss in a way that results in only a relatively low processing burden.